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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/854,789 05/14/01 BARRY

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EXAMINER

027997 TM02/0803
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CHAPEL HILL NC 27516

ART UNIT	PAPER NUMBER
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2182
DATE MAILED:

08/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/854,789

Applicant(s)
Edwin Frank Barry

Examiner
Christopher Shin

Art Unit
2182



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Jun 8, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-15 and 38-46 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-7, 9-13, and 38-46 is/are rejected.

7) ☒ Claim(s) 8, 14, and 15 is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892).

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other: _____

DETAILED ACTION

1. The Preliminary Amendment received June 8, 2001 has been entered and carefully considered. Claims 16-37 have been canceled, 38-41 have been added, and 1-15 & 38-46 are pending in the application.

Specification

2. The disclosure is objected to because of the following informalities:
Any reference to related application must be identified by the Serial Number or Patent Number, if patented..
Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 9-10, and 38-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrell et al. (5,301,287).

i. In figure 3 & the respective description section teaches the claimed limitations as follows:

Claims 1-3, 9-10, 38-46

Herrell (figure 3)

- apparatus for performing VID to PID translation/translation logic for data element to be accessed within local memory of a PE
 - feature of column 2, lines 54-57
- direct memory access controller can access PE memories according to their VIDs
 - feature of (22) accessing (32) using (222)

- DMA controller
 - feature of (22, 222)
- memory maintained in the DMA controller for storing a processing element VID-to-PID table
 - feature of column 8, lines 54-59
- memory is maintained in the CTU of the DMA controller
 - feature of col 11, lines 51-55, maintained in the (222) of (22)
- CTU further comprises AGU which receives CTU transfer instruction which specifies a starting address which is used by the AGU to generate an initial VID
 - feature of col 11, lines 18-36
- VID-to-PID table is stored in a programmable register and the programmable register loaded utilizing a DMA instruction
 - feature of VtoP of (222 & 223)
- initial VID is mapped to PID by the translation logic
 - feature of (223 & 223)
- DMA bus for providing the translated PID as a first component of PE address
 - feature of bus 21 connected to (VtoP)
- translation vector
 - common feature of VID-PID translation

ii. As for claims 1-3, 9-10 & 38-41, the difference between the claimed invention and the teachings of the Herrell reference is that the reference does not expressly/identically disclose the same environment of Processing Element/Memory. The reference teaches an environment that are substantially/functionally identical to the claimed invention. In addition, the DMA technique with Virtual to Physical translation was commonly utilized in many different system environments where data transfer is desired, which is one of the basic operation/function of data processing systems in the art. Therefore, it would have been obvious at the time was made to one skill in the art utilize such well known and commonly practiced technique in the claimed system, as taught by Herrell in combination with the common knowledge in the art, as discussed above.

iii. As for claims 42-46, due the similarity between the limitations/functions of the claims, the teachings of the claim above claims are similarly applied. However, the claim 42 further adds limitation regarding the address comparison for the before accepting the access. However, such function/limitation is obvious from the teachings of the Herrell reference. As can

be seen from the figure 3 & column, column 6, lines 45-62, the Herrell reference teaches plurality of memory mapping for the processes (202 & 203) and the memory (32) are accessed according to such mapping within the system. The function of proper memory addressing/comparison is implicitly taught or obvious from the teachings of the Herrell reference.

5. Claims 4-7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrell et al. (5,301,287) as applied to claims 1-3, 9-10 & 38-41 above, and further in view of McLellan et al. (5,890,201).

a. As for claims 4-6 & 11-13, further add limitations regarding the VID-to-PID translation & a Multiplexer. Such limitations are commonly known in the DMA address translation art. As evidence, the McLellan teaches a similar DMA environment where a Multiplexer is utilized, As can be seen in figure 1. In addition, the examiner gives official notice on such well known or common knowledge in the art of address translation.

b. As for claim 7, further adds limitation regarding the address comparison for the before accepting the access. However, such function/limitation is obvious from the teachings of the Herrell reference. As can be seen from the figure 3 & column, column 6, lines 45-62, the Herrell reference teaches plurality of memory mapping for the processes (202 & 203) and the memory (32) are accessed according to such mapping within the system. The function of proper memory addressing/comparison is implicitly taught or obvious from the teachings of the Herrell reference.

Allowable Subject Matter

6. Claims 8 and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **Any Response To This Action Should Be Mailed To:**

If The Action Is Non-Final

Commissioner of Patents and Trademarks

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Art Unit: 2182

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Washington, D.C. 20231
or faxed to:
(703) 746-5678, (for formal communications intended for entry)

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Hand-delivered responses should be brought to

Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any Other Telephone Communication Should Be Directed To

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Shin whose telephone number is (703) 305-9658. The examiner can normally be reached on Tuesday - Friday from 7:00 AM to 4:00 PM. A courtesy phone call after a Fax communication is greatly appreciated.

Christopher B. Shin
August 2, 2001

Christopher B. Shin
PRIMARY EXAMINER
ART UNIT 2182

